Venu Satuluri

15+ years of learning and applying ML at the frontier.
Strong on ML fundamentals and programming chops. Quick learner.

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Google Scholar

Work Experience

Mid 2023-Current — **Co-Founder of Receptive AI**

Me and my co-founder created a AI voice agent that can answer phone calls 24/7 for small businesses (plumbers, insurance agents), and take actions such as book appointments, call transfers, and SMSes. Faced with strict latency constraints and the low bandwidth / noisiness of phone lines, we created a reliably working agent with >90% call success rate. Speech detection error rates of 3%, avg latencies of 1.4s, and human-like synth made our bot a pleasure to talk with. Check out our 5-star app reviews.

2012-'22 — **Principal Machine Learning Engineer at Twitter**

During my decade at Twitter, I played a key role in several ground-breaking products and improvements in the space of recommendations and machine learning.

- In 2013, I co-created Twitter's first tweet recommendations product, called **MagicRecs**. This also became Twitter's first sustained growth driver, and was responsible for double-digit user growth increases for several years. I was also Tech Lead Manager for this team from 2015-16.
- In 2017, I stepped away from MagicRecs and focused on creating **SimClusters**, which provided a sparse, interpretable basis for representing a variety of Twitter nouns such as users, tweets, topics, and trends, and enabled both fast candidate retrieval as well as ranking. This found applications in a variety of teams around the company, including Home Timeline, MagicRecs, Explore, Health, and Ads. See our KDD 2020 paper for more.
- In 2020-'21, I was the group tech lead for **Interests**, the top company initiative for that timespan.
- From 2019 till my departure in '22, I mentored the manager and tech leads of the Relevance Platform team. During my last year at the company, I also mentored the tech leads of the Home Timeline ranking teams.

2006-'12 — **Ph.D. Candidate (defended in March 2012), The Ohio State University**

Did research in graph clustering (a.k.a. community discovery from networks) and similarity search algorithms. My research was published in the top venues of the field such as KDD, SIGMOD, and VLDB.

2005-'06 — **Software Engineer, D. E. Shaw India**

Selected Code

SBF	Sparse Binary Factorization, community discovery from billion-node graphs, used in SimClusters.
Analyses	A repo with notebooks doing various ML analyses e.g. comparing different Transformer implementations.

Selected Research Publications

KDD 2020	Simclusters: Community-based representations for heterogeneous recommendations at Twitter Venu Satuluri, Yao Wu, Xun Zheng et. al.
PVLDB 2014	Real-time Twitter recommendation: online motif detection in large dynamic graphs Pankaj Gupta, Venu Satuluri, Ajeet Grewal et. al
PVLDB 2012	Bayesian locality sensitive hashing for fast similarity search Venu Satuluri and Srinivasan Parthasarathy
SIGMOD 2011	Local graph sparsification for scalable clustering Venu Satuluri, Srinivasan Parthasarathy, and Yiye Ruan
KDD 2009	Scalable graph clustering using stochastic flows: applications to community discovery Venu Satuluri and Srinivasan Parthasarathy

Education

May 2012 — Ph.D. in Computer Science, **The Ohio State University**
Thesis: "Scalable Clustering for Modern Networks"

May 2005 — B.Tech. in Computer Science
National Institute of Technology Karnataka, India

Awards

2013 ACM SIGKDD Dissertation Awards, *Honorable Mention*
2011 Outstanding Graduate Research Award
Dept. of Computer Science and Engineering, The Ohio State University